FULL CONTENTS

[Claim(s)]
[Claim 1] The management server which manages the unlocking information on a delivery van, and the personal digital assistant which the driver of a delivery van holds, The delivery van lock controller formed in said delivery van, and said management server, Are a personal digital assistant and a delivery van lock controller the delivery van lock system which consists of a communication network which carries out interconnection, and [said management server] While holding the data and the unlocking information on this delivery van that said delivery van is specified, for the memory means inside correspondence ****** Transmit said unlocking information to said terminal and said delivery van lock controller, and [said personal digital assistant] Have a memory means to memorize unlocking information, the control means which reads said unlocking information from said memory means, and a transmitting means to put said unlocking information on a carrier and to transmit, and [said delivery van lock controller] The 1st memory means which memorizes the unlocking information transmitted from said management server, The delivery van lock system characterized by having the control means which is based on a comparison result as compared with the unlocking information within said memory means in response to the unlocking information transmitted from said personal digital assistant, and locks or unlocks the door keylock of a loading platform, and the 2nd memory means which memorizes the history of the lock/unlocking of said door keylock.
[Claim 2] Said delivery van lock controller is a delivery van lock management system according to claim 1 characterized by detecting the unlocking information which was in agreement out of the unlocking information within said memory means in the unlocking information transmitted from said personal digital assistant as compared with the unlocking information within said memory means, and unlocking the lock corresponding to the detected unlocking information.
[Claim 3] Said personal digital assistant is a delivery van lock system according to claim 1 characterized by having a means to make said memory means memorize the unlocking information transmitted from said management server.
[Claim 4] Said management server is a delivery van lock system according to claim 1 characterized by changing the unlocking information within an internal memory means, and transmitting the unlocking information after change to said personal digital assistant and said delivery van lock controller.
[Claim 5] The management server which manages the unlocking information on a delivery van, and the personal digital assistant which the driver of a delivery van holds, The delivery van lock controller formed in said delivery van, and said management server, Are a personal digital assistant and a delivery

van lock controller the delivery van lock system which consists of a communication network which carries out interconnection, and [said management server] While holding the data and the unlocking information on this delivery van that said delivery van is specified, for the memory means inside correspondence ****** While transmitting said unlocking information to said personal digital assistant according to the demand from said personal digital assistant, record the data in which transmitting time and the transmitted unlocking information are shown on an internal memory means, and [said personal digital assistant] By radio, carry out short-distance transmission and the unlocking information transmitted from said management server [said delivery van lock controller] The delivery van lock system characterized by having a memory means by which unlocking information was memorized beforehand, receiving the unlocking information transmitted from said personal digital assistant, being based on a comparison result as compared with the unlocking information within said memory means, and locking or unlocking the door keylock of a loading platform.

[Claim 6] Said management server is a delivery van lock system according to claim 5 characterized by transmitting said unlocking information to said personal digital assistant when the input of a personal identification number is urged when a demand of unlocking information is received from said personal digital assistant, and the inputted personal identification number is in agreement with the number registered beforehand.

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the lock system of the delivery van containing a refrigerator car, a refrigerator car, etc., and relates to the delivery van lock system which used the cellular phone especially.
[0002]
[Description of the Prior Art] Conventionally, the key of the deck door of a delivery van is a metal key which usually often exists, and performs lock/unlocking of a deck door with manual operation.
[0003]
[Problem to be solved by the invention] However, when such a conventional key system had even the key, anyone could unlock the deck door and, for this reason, had a security management top problem. Moreover, since lock management of deck doors, such as a refrigerator car and a refrigerator car, was performed manually, states, such as left open, occurred and there was a problem which cannot fully perform fine temperature management etc.
[0004] This invention was made in consideration of such a situation, that purpose tends to perform security management, and it is in moreover offering the delivery van lock system which can always manage a deck door appropriately.
[0005]
[Means for solving problem] This invention was made that the above-mentioned technical problem should be solved, and [invention according to claim 1] The management server which manages the unlocking information on a delivery van, and the personal digital assistant which the driver of a delivery van holds, The delivery van lock controller formed in said delivery van, and said management server, Are a personal digital assistant and a delivery van lock controller the delivery van lock system which consists of a communication network which carries out interconnection, and [said management server]

While holding the data and the unlocking information on this delivery van that said delivery van is specified, for the memory means inside correspondence ****** Transmit said unlocking information to said terminal and said delivery van lock controller, and [said personal digital assistant] Have a memory means to memorize unlocking information, the control means which reads said unlocking information from said memory means, and a transmitting means to put said unlocking information on a carrier and to transmit, and [said delivery van lock controller] The 1st memory means which memorizes the unlocking information transmitted from said management server, It is the delivery van lock system characterized by having the control means which is based on a comparison result as compared with the unlocking information within said memory means in response to the unlocking information transmitted from said personal digital assistant, and locks or unlocks the door keylock of a loading platform, and the 2nd memory means which memorizes the history of the lock/unlocking of said door keylock.

[0006] Moreover, in a delivery van lock management system according to claim 1, invention according to claim 2 [said delivery van lock controller] It is characterized by detecting the unlocking information which was in agreement out of the unlocking information within said memory means in the unlocking information transmitted from said personal digital assistant as compared with the unlocking information within said memory means, and unlocking the lock corresponding to the detected unlocking information. Moreover, it is characterized by invention according to claim 3 having a means to make said memory means memorize the unlocking information to which said personal digital assistant is transmitted from said management server in a delivery van lock system according to claim 1.

[0007] Moreover, invention according to claim 4 is characterized by for said management server changing the unlocking information within an internal memory means, and transmitting the unlocking information after change to said personal digital assistant and said delivery van lock controller in a delivery van lock system according to claim 1.

[0008] Moreover, the management server with which invention according to claim 5 manages the unlocking information on a delivery van, The personal digital assistant which the driver of a delivery van holds, and the delivery van lock controller formed in said delivery van, Are said management server, a personal digital assistant, and a delivery van lock controller the delivery van lock system which consists of a communication network which carries out interconnection, and [said management server] While holding the data and the unlocking information on this delivery van that said delivery van is specified, for the memory means inside correspondence ****** While transmitting said unlocking information to said personal digital assistant according to the demand from said personal digital assistant, record the data in which transmitting time and the transmitted unlocking information are shown on an internal memory means, and [said personal digital assistant] By radio, carry out short-distance transmission and the unlocking information transmitted from said management server [said delivery van lock controller] It is the delivery van lock system characterized by having a memory means by which unlocking information was memorized beforehand, receiving the unlocking information transmitted from said personal digital assistant, being based on a comparison result as compared with the unlocking information within said memory means, and locking or unlocking the door keylock of a loading platform.

[0009] Moreover, invention according to claim 6 is set to a delivery van lock system according to claim 5. When the input of a personal identification number is urged to said management server when a demand of unlocking information is received from said personal digital assistant, and the inputted personal identification number is in agreement with the number registered beforehand, it is characterized

by transmitting said unlocking information to said personal digital assistant.
[0010]
[Mode for carrying out the invention] With reference to Drawings, the form of 1 implementation of this invention is explained hereafter. Drawing 1 is the block diagram showing the composition of the delivery van lock system by the form of this operation. In this figure, signs 1 and 2 are personal digital assistants which the driver of a delivery van owns, such as a cellular phone and PHS, and are connected to the Internet 4 through the base station 3. 5 is the delivery van lock controller attached to the delivery van, has a function equivalent to a cellular phone inside, and is connected to the Internet 4 through the base station 3. 6 is a management server which the express company which is the owner of a delivery van manages, is carrying out memory maintenance of the unlocking information on a delivery van corresponding to the registration number of a delivery van, and is connected to the internal database through the telephone line at the Internet 4.
[0011] Drawing 2 is the figure showing an example of the database in the management server 6. As shown in this figure, it corresponds to a database at the registration number of a delivery van. A "user name", a "Type", a "personal digital assistant telephone number", a "personal identification number", "engine unlocking information", "driver's seat door unlocking information", "loading-platform door unlocking information", "bonnet unlocking information", and "dashboard unlocking information" are recorded respectively. in addition, it is shown that, as for "-", quota **** do not have the unlocking information.
[0012] Drawing 3 is the block diagram showing the composition of the personal digital assistants 1 and 2 mentioned above. In this figure, the key unit with which 11 consists of function keys, such as a liquid crystal display, a ten key for a telephone number input in 12 and an off-hook key, and an on-hook key, and 13 are controllers which control each part of a personal digital assistant. 14 is the communications department, it changes into a sound signal the signal from the base station 3 received through the antenna 15, and outputs it to a loudspeaker 16, and puts the output of a microphone 17 on a carrier, and transmits from an antenna 15. Moreover, this communications department 14 puts on a carrier the data which outputs the telephone number of the dispatch origin which received from the base station 3, and various kinds of data to a controller 13, and is outputted from a controller 13, and transmits to a base station 3. The above composition is the same as the composition of the personal digital assistant in which the conventional data communication is possible. A sign 19 is the short distance communications department, puts the data outputted from a controller 13 on a weak carrier, and sends it from an antenna 20. The Bluetooth standard practice is used in this case. 21 is a nonvolatile memory and the unlocking information on a delivery van is memorized.
[0013] Drawing 4 is the block diagram showing the composition of the delivery van lock controller 5. In this figure, 31 is the communications department, puts on a carrier the data which restores to the signal received through the antenna 32, and outputs to a controller 33, and is outputted from a controller 33, and transmits from an antenna 32. A memory 34 is a nonvolatile memory various kinds of unlocking information transmitted from the management server 5 is remembered to be. A memory 35 is a nonvolatile memory on which the opening-and-closing history of the door keylock of the loading platform of a delivery van is recorded. A memory 34 and a memory 35 may use the same memory. 36 is a clock circuit and outputs the present time to a controller 33.
[0014] A controller 33 is based on the data supplied through the communications department 31. [the starter 38 for engine starting, the solenoid 39 for a driver door lock drive, the solenoid 40 for the lock

drive of a deck door, the bonnet solenoid 41 that drives the lock mechanism of a bonnet, and the dashboard solenoid 43 for the lock drive of a dashboard stowage] It is the circuit which carries out drive controlling respectively. The output part 42 amplifies the output of a controller 33, and outputs it to a starter 38 and solenoids 39-43.

[0015] Next, operation of an embodiment mentioned above is explained. First, if an express company purchases a delivery van, as shown in drawing 2 , a user name, a Type, and a personal digital assistant telephone number will be registered into the database of the management server 6, and, subsequently each user's personal identification number will be decided and registered into it. Next, each unlocking information on an engine, a driver's seat door, a loading-platform door, a bonnet, and a dashboard is decided. Next, the portion which permits unlocking about each user is decided, and unlocking information is registered according to the arrangement. Next, the decided unlocking information is transmitted to each user's personal digital assistant through the Internet 4 from the management server 6, and each user is notified of a personal identification number by telephone etc. Subsequently, a management server transmits all the unlocking information to the delivery van lock controller 5 in which it was prepared by the delivery van. If unlocking information is transmitted to the personal digital assistants 1 and 2 from the management server 6, the transmitted unlocking information will be memorized by the memory 21 (drawing 3) of the personal digital assistants 1 and 2. Moreover, if unlocking information is transmitted to the delivery van lock controller 5 from the management server 6, the memory 34 (drawing 4) of this controller 5 will memorize.

[0016] Next, when the driver who owns the personal digital assistant 1 tries to ride on a delivery van, in the key unit 12 of the personal digital assistant 1, predetermined key operation (for example, "#, 1") for which it opted beforehand is performed first that a door lock should be canceled. If this key operation "#, 1" is performed, a controller 13 will detect this, will read the unlocking information on an internal memory part idle running hand door lock, and will output to the short distance communications department 19. The short distance communications department 19 puts the unlocking information on a carrier, and transmits from an antenna 20. Through the antenna 32 of the delivery van lock controller 4, it is received, and the transmitted unlocking information gets over in the communications department 31, and is outputted to a controller 33. By comparing with the unlocking information in a memory 34 the unlocking information outputted from the communications department 31, a controller 33 detects that the unlocking information on a driver door lock was received, and outputs the driving signal which drives the door solenoid 39 to the output part 42. The output part 42 amplifies this driving signal, and outputs it to the door solenoid 39. Thereby, the door solenoid 39 drives and a door lock is canceled.

[0017] Next, when a driver rides on a delivery van and it puts an engine into operation, key operation "#, 2" is performed in the key unit 12 of the personal digital assistant 1. If this key operation "#, 2" is performed, a controller 13 will detect this, will read the unlocking information on a starter from an internal memory part, and will output to the short distance communications department 19. The short distance communications department 19 transmits the unlocking information from an antenna 20. The transmitted unlocking information is received in a controller 33 through the antenna 32 of the delivery van lock controller 4, and the communications department 31. By comparing the received unlocking information with the unlocking information in a memory 34, a controller 33 detects that the unlocking information on a starter was received, and outputs the driving signal which drives a starter 38 to the output part 42. The output part 42 amplifies this driving signal, and outputs it to a starter 38. Thereby, a starter 38 drives and an engine starts.

[0018] Next, when a driver tries to cancel the lock of a deck door, key operation "#, 3" is performed in the key unit 12 of the personal digital assistant 1. If this key operation "#, 3" is performed, a controller 13 will read the unlocking information on a deck door from an internal memory part, and will output to the short distance communications department 19. The short distance communications department 19 transmits the unlocking information from an antenna 20. The transmitted unlocking information is received in the controller 33 of the delivery van lock controller 4, and [a controller 33] By comparing the received unlocking information with the unlocking information in a memory 34, it detects that the unlocking information on a deck door was received, and the driving signal which drives the deck door solenoid 40 is outputted to the output part 42. The output part 42 amplifies this driving signal, and outputs it to the deck door solenoid 40. Thereby, a deck door lock is unlocked. Moreover, at this time, a note of the present time currently outputted from the clock circuit 36 is made with the mark which shows deck door unlocking, and a controller 33 writes it in 35.

[0019] Next, when a driver tries to lock a deck door, key operation "#, 4" is performed in the key unit 12 of the personal digital assistant 1. If this key operation "#, 4" is performed, a controller 13 will read the unlocking information on a deck door from an internal memory part again, and will output to the short distance communications department 19. The short distance communications department 19 transmits the unlocking information from an antenna 20. The transmitted unlocking information is received in the controller 33 of the delivery van lock controller 4. By comparing the received unlocking information with the unlocking information in a memory 34, a controller 33 detects that the unlocking information on a deck door was received, and, subsequently to the state of unlocking, detects that there is the present deck door from the data in a memory 35. Then, a controller 33 outputs the signal which changes the deck door solenoid 40 into a lock state to the output part 42. The output part 42 receives this signal and sets the drive of the deck door solenoid 40 to OFF. Thereby, a deck door solenoid is set to OFF and a deck door lock returns to a lock state. Moreover, at this time, a note of the present time currently outputted from the clock circuit 36 is made with the mark which shows a deck door lock, and a controller 33 writes it in 35.

[0020] Next, after operation on the 1st of a delivery van is completed, a driver notifies that to the management server 6 from the personal digital assistant 1. The management server 6 receives the notice and transmits directions of deck door data transmission to the delivery van lock controller 5 through the Internet 4. These directions are received by a controller 33 through the antenna 32 of the delivery van lock controller 5, and the communications department 31. A controller 33 receives these directions, reads the history of deck door lock opening and closing of that day from a memory 35, and transmits to the management server 6 through the Internet 3 from the communications department 31. The management server 6 receives this transmitted data, and writes it in an internal database.

[0021] Next, when there is change of a delivery person's driver, it is necessary to repeal the unlocking information on the personal digital assistant 1 which the old driver was using. In this case, the official in charge of an express company deletes first all the unlocking information on the object delivery van registered into the database of the management server 6, subsequently generates new, new unlocking information, and registers with a database. Next, while transmitting the unlocking information which carried out initial registration to each user's personal digital assistant, it transmits to the delivery van lock controller 5. The controller 13 of a personal digital assistant writes in the unlocking information transmitted to the memory 21. Moreover, the controller 33 of the delivery van lock controller 5 rewrites the unlocking information in a memory 34.

[0022] In addition, in the above-mentioned embodiment, an alcoholic sensor is attached near the driver's seat of a delivery van, and the output of the sensor is inputted into a controller 33. And also when a controller 33 receives the unlocking information on engine starting through the communications department 31, you may make it not drive a starter 38, when the output of the sensor is over the fixed level. Thereby, drunken driving can be prevented. Moreover, although the history of the lock/unlocking of a deck door lock is made to memorize in the memory 35 in the delivery van lock controller 5, it replaces with this and you may make it make the memory circles of the personal digital assistants 1 and 2 memorize according to the above-mentioned embodiment.

[0023] Next, the 2nd embodiment of this invention is explained. The entire configuration of this embodiment is the same as drawing 1 , and the block configuration of each part of it is the same as that of drawing 2 - drawing 4 . A different point from the 1st embodiment which this embodiment mentioned above is operation of a point and a controller 13 and operation of the management server 6 unlocking information is not remembered to be in the memory 21 of the personal digital assistants 1 and 2. Only a different point from the above-mentioned embodiment is explained hereafter.

[0024] When a driver tries to open a loading-platform door, he performs key operation (for example, under "#" **) in the key unit 12 of the personal digital assistant 1 first that a lock should be canceled, for example. If the bottom of this key operation "#" ** is performed, a controller 13 will detect this and will notify the bottom of "#" ** to the management server 6. The management server 6 receives this notice and transmits all the registration numbers of the car by which use is permitted to the driver now to the personal digital assistant 1. The transmitted registration number is displayed as shown in the liquid crystal display 11 of the personal digital assistant 1 at drawing 5 (a). Here, if the registration number of the car which a driver is trying to ride in with cursor is chosen next, the management server 6 will transmit the personal identification number input screen shown in drawing 5 (b) to the personal digital assistant 1.

[0025] If a driver inputs a personal identification number in this screen, the personal identification number into which the management server 6 was inputted will be compared with a driver's personal identification number registered into the internal database. And when a collation result is "disagreement", the guidance sentence to which it shows that is transmitted to the personal digital assistant 1. On the other hand, when a collation result is "coincidence" next, the character with which the management server 6 detects the unlocking information set up to the driver in the database, and expresses the detected unlocking information is transmitted to the personal digital assistant 1 with a guidance sentence (refer to drawing 5 (c)).

[0026] Here, with cursor, if a driver chooses required unlocking information (in this case "loading-platform door"), he will read the unlocking information on a loading-platform door that the management server 6 was chosen from a database, and will transmit to the personal digital assistant 1. Moreover, the management server 6 records having transmitted the unlocking information on a loading-platform door to the driver and an automobile registration number, and date time on an internal database at this time. The controller 13 of the personal digital assistant 1 receives the unlocking information from the management server 6, and outputs it to the short distance communications department 19. The short distance communications department 19 transmits this unlocking information from an antenna 20. Thereby, the loading-platform door solenoid 40 of the automobile controller 5 drives, and a loading-platform door is unlocked. Processing completely same also at the time of locking of a loading-platform door is performed, and the solenoid drive of those other than a loading-platform door solenoid or the

drive of a starter 36 is also completely performed in the same process.

[0027] Thus, according to the 2nd embodiment of the above, unless the check by the personal identification number in the management server 6 can be taken, unlocking/locking of each part of a car cannot be performed, but thereby, security reservation firmer than the conventional thing can be performed. Moreover, according to this embodiment, the advantage in which record of locking/ unlocking remains is also acquired.

[0028]

[Effect of the Invention] Since a personal digital assistant is used instead of a key according to Claim 1 and invention according to claim 5 as explained above Only those who possess the personal digital assistant with which unlocking information was registered can perform operation of a delivery person and opening and closing of a deck door, but, thereby, the advantage which reservation of security tends to perform is acquired. Moreover, since a physical lock is lost, it can be in the state where a key does not understand where it is, and security can be raised also by this. Moreover, since the history of the lock/ unlocking of a deck door lock is recorded, the advantage which can perform appropriately management of the lock state of deck doors, such as a refrigerator car and a refrigerator car, and a switching condition is acquired.

[0029] Moreover, since the starter of a delivery van can be driven with a radio signal from a personal digital assistant according to invention according to claim 2, the advantage which becomes possible [starting the engine] from the place distant from the middle delivery van of the house is acquired. Moreover, since according to invention according to claim 4 a management server changes the unlocking information within an internal memory means and transmits the unlocking information after change to a personal digital assistant and a delivery van lock controller, the advantage which can change unlocking information easily in the case of a shift of a driver or the theft of a personal digital assistant is acquired. Moreover, since according to invention according to claim 6 unlocking information is transmitted after checking a personal identification number, security can be raised further.

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the composition of the delivery van lock system by the 1st and 2nd embodiment of this invention.

[Drawing 2] It is the figure showing the database formed in the management server 6 in drawing 1 .

[Drawing 3] It is the block diagram showing the composition of the personal digital assistants 1 and 2 in drawing 1 .

[Drawing 4] It is the block diagram showing the composition of the delivery van controller 4 in drawing 1 .

[Drawing 5] It is a figure for explaining operation of the 2nd embodiment of this invention.

[Explanations of letters or numerals]

1, 2 -- Personal digital assistant

3 -- Base station

4 -- Internet

5 -- Delivery van lock controller

6 -- Management server

12 -- Key unit
13 -- Controller
14 -- Communications department
19 -- Short distance communications department
31 -- Communications department
33 -- Controller
34, 35 -- Memory
36 -- Clock circuit
38 -- Starter
39 -- Driver door solenoid
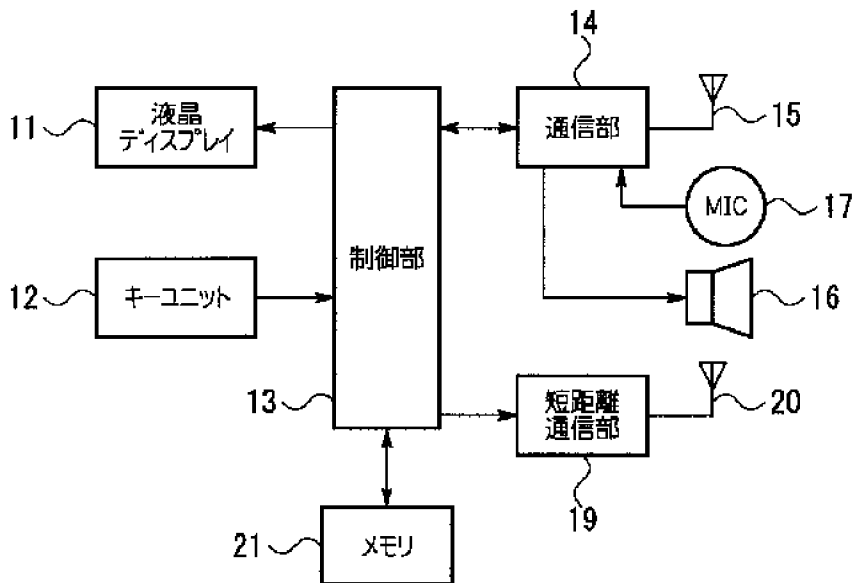40 -- Loading-platform door solenoid

[Drawing 1]
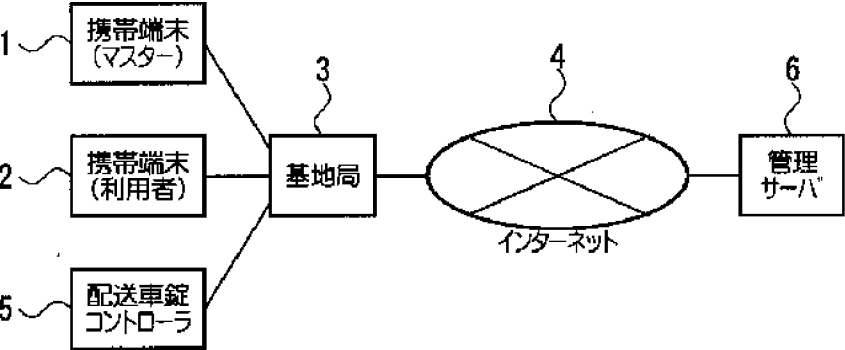
[Drawing 2]

登録番号	品川 500 に 1234								
使用者名	区分	携帯端末電話番号	暗証番号	エンジン	運転席ドア	荷台ドア	ボンネット	ダッシュボード
小林	運転手	090-0123-5678	2612	1625	2317	7480	4563	1423
鈴木	運転手	090-5789-3467	5326	1625	2317	7480	—	—
中村	運転手	090-2378-3726	1753	1625	2317	7480	4563	—
渡辺	運転手	090-6231-2115	6298	1625	2317	7480	—	—
石川	運転手	090-4678-14445	4538	1625	2317	7480	—	—
オートクリーン	清掃業者	090-5426-1028	9201	—	2317	7480	—	—
日生自動車	修理業者	090-456-7891	6324	1625	2317	7480	4563	—

[Drawing 3]

携帯端末　1．2

制御部 13

11 液晶ディスプレイ

12 キーユニット

14 通信部

15

17 MIC

16

20 短距離通信部

19

21 メモリ

[Drawing 4]

配送車錠コントローラ　5

32

31 通信部

36 時計回路

42 出力部

33 制御部

34 メモリ

35 メモリ

38 セルモータ

39 運転席ドアソレノイド

40 荷台ドアソレノイド

41 ボンネットソレノイド

43 ダッシュボードソレノイド
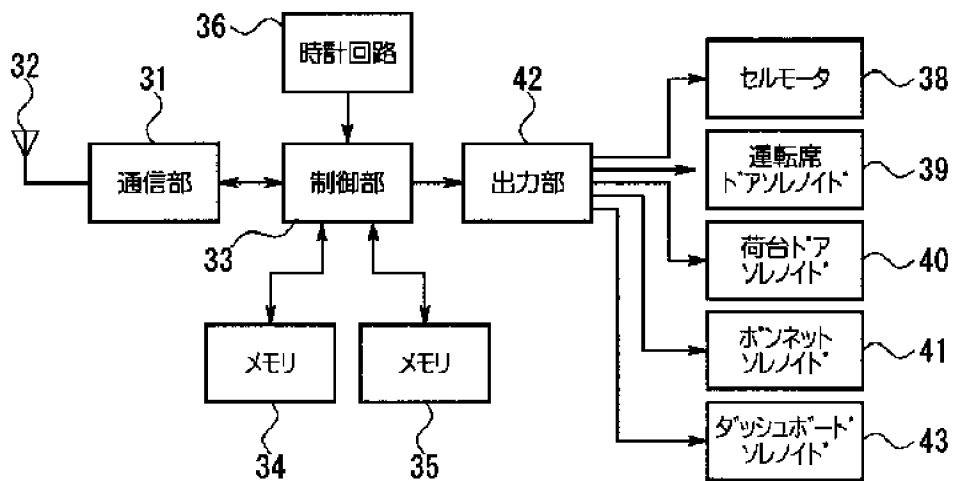
[Drawing 5]

(a)

使用する自動車

品川 500 に 1234
練馬 300 ふ 5678

(b)

暗証番号を入力して
下さい。

2612

(c)

解錠対象を選択して
下さい。

エンジン
運転席ドア
荷台ドア

[Translation done.]